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LISTS OF SPECIES

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Checklist of aphyllophoroid fungi (Basidiomycota) of the Archipelago Sea National Park, Southwest Finland

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Abstract: Aphyllophorales is an unnatural group of fungi, which are mainly wood decaying saprobes but also mycorrhizal or parasites, and are phylogenetically diverse. In this study we focused on polypores, corticioids and hydnaceous wood decayers with the common feature to form basidiocarps on woody substrates or litter. The checklist is mainly based on material collected during 2008–2010 in the Archipelago Sea National Park and its surrounding area in Southwest Finland. The aim of the study was biogeographical and ecological research of wood-inhabiting aphyllophorales and their habitats. We list 303 species from the study area. It is 40% of all known species (756) of the target groups recorded in Finland. Six species new to Finland were collected during the field work, which are already reported earlier. Our collections include 26 species, which can be defined as rare, with only five or less earlier records in Finland, and 18 species that are red-listed.

Key words: aphyllophorales, fungal diversity, insular biogeography, species richness, wood-inhabiting fungi

INTRODUCTION

Aphyllophorales (or aphyllophoroid fungi), is an unnatural group of fungi. They are mainly wood or litter decaying saprobes, mycorrhizal or parasites and are phylogenetically strongly diverse. In this study, however, the groups that were studied (polypores, corticioids, hydnaceous wood decayers) have a common feature: they all form basidiocarps on woody substrates or litter, and are traditionally collected and studied by polyporologists and/or corticologists. Hydnaceous soil dwelling fungi are excluded (e.g., genera *Bankera*, *Hydnellum, Hydnum*) like all pileate tremelloid, clavarioid and ramarioid taxa. On the other hand, resupinate, corticioid heterobasidioid fungi are included.

The first extensive checklist of aphyllophoroid fungi in Finland (Kotiranta et al. 2009) lists altogether 756 species of our target groups. The majority of these, 489 species, occur also, or even solely, on the coastal region of southwestern Finland, including the Archipelago Sea (Kotiranta et al. 2009). After publishing the Finnish checklist, many new corticioid and polypore species have been reported from Finland (Kunttu et al. 2009, 2010, 2011, 2012, 2013; Kotiranta and Shiryaev 2013; Spirin et al. 2013a). There are no earlier large scale biogeographical or ecological studies of Aphyllophorales on the Archipelago Sea, and only one general publication of macrofungi (Vauras 2000).

In this checklist, the Archipelago Sea is defined as the National Park of Archipelago Sea and its surrounding area (Figure 1). This national park is also known as Archipelago National Park or Southwestern Archipelago National Park. The Archipelago Sea has the highest biodiversity in Finland and there occur many species and biotopes not found elsewhere in Finland (Lindgren 2000; Lappalainen 2004).

MATERIALS AND METHODS

The Archipelago Sea—part of the Baltic Sea—is the most southwestern part of the Finnish coastline and includes 40,000 islands or islets. The area belongs to hemiboreal vegetation zone and is part of the biogeographic province of Regio aboënsis (Ahti et al. 1968; Hansen and Knudsen 1997). The map of Finnish forest vegetation zones is also on the website of Finland's environmental administration (2009).

The Archipelago Sea National Park was founded in 1983. Because the national park has fragmentary composition, there is a much wider, unprotected area around it, which covers 151 km² of land and 2,896 km² of sea (Figure 1). It contains about 8,384 islands or skerries (size at least 100 m²). However, only 23% (35 km²) of land area is protected by the national park legislation. More details of this area are in Lindgren (2000) and

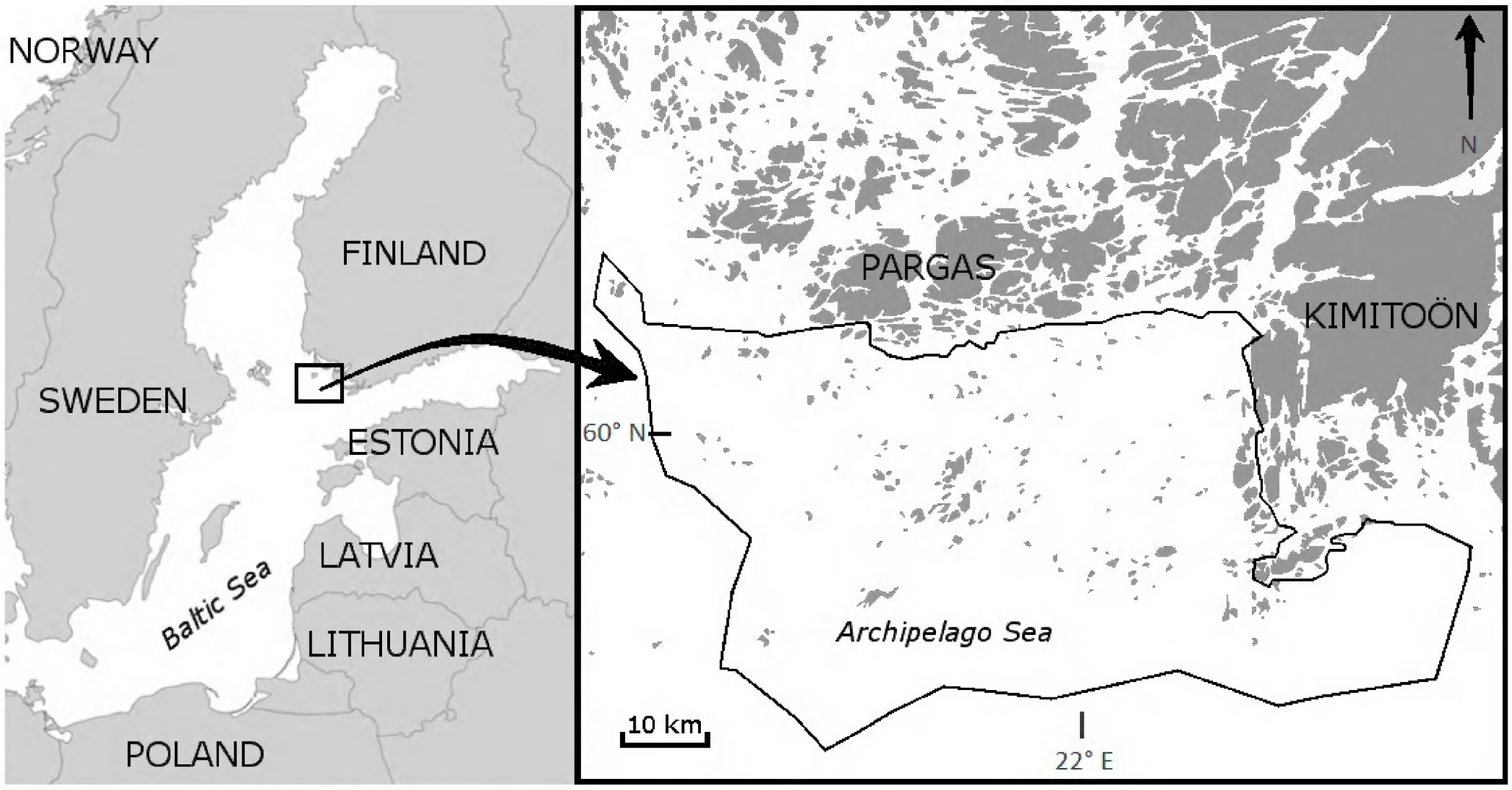

Figure 1. Map of the Archipelago Sea and location of the investigated area (black line).

Metsähallitus (2014).

The investigated area has some special features: the growing season is long (180–195 days), the diversity of biotopes and tree species is high, herb-rich forests are common, wooded pastures and semi-natural woodlands and meadows are still grazed, especially on larger islands, traditionally by domestic animals. These kinds of rural landscapes are more common in the archipelago than elsewhere in the province of Southwest Finland (Lehtomaa 2000).

According to Kunttu et al. (2014), the national park with its surroundings is inhabited by 467 Threatened and Near Threatened taxa, and the number of species is high in many organism groups (Lindgren 2000, 2001). The habitat diversity is high and there are 45 Natura 2000 habitat types according to the European Union's Habitats Directive (Lindgren 2000; Varsinais-Suomen ELY-keskus 2013), many of them rare or unique (Lindgren et al. 2001).

Small islands have been saved from intense forestry but household use for building, fodder for domestic animals and collecting of firewood have occurred. Lindgren et al. (2001) list many biologically highly valuable biotopes in the archipelago, including different types of forests. In comparison with forests of other areas in Southern Finland, the highest volume of dead wood was measured in the archipelago regions (Finnish Forest Research Institute 2012; P. Kunttu, unpubl.).

Panu Kunttu (PK) surveyed and collected the material during the summers and autumns 2008–2010. This study covers 29 islands (total 1,320 ha of which 1,074 ha forested), 6,648 dead trunks and branches, 2,659 collections, and 6,318 observations. Some additional material was collected during occasional field trips to this area. Some earlier records were published by Vauras (2000).

The specimens were identified by Matti Kulju (MK), Panu Kunttu (PK), Heikki Kotiranta (HK), Jorma Pennanen (JP) and Urmas Kõljalg (UK). Voucher specimens are deposited in the herbaria of Universities of Turku (TUR) or Åbo Akademi (TUR-A).

The nomenclature of the genus *Hyphodontia sensu lato* follows Hjortstam and Ryvarden (2009), of the polypores mainly Niemelä (2005), and of other groups mainly Kotiranta et al. (2009). Some recent combinations are not found in any manuals, and the reader is referred to Miettinen and Larsson (2010), Miettinen et al. (2012) and Spirin et al. (2013b). The Finnish national red-listing evaluation of the IUCN Red List Categories is according to Kotiranta et al. (2010).

RESULTS

A total of 303 species are listed in alphabetic order regardless of their systematic position (Table 1). This is 40% of all known species in these species groups in Finland and ca. 62% of species found earlier from the the coastal region of southwestern Finland.

The list comprises 106 polypores, 195 corticioids *sensu lato* and two wood inhabiting hydnaceous fungi. The most species-rich genera are *Trechispora* (15 species), *Phellinus* (14), *Postia* (13), *Phlebia* (10), *Botryobasidium* (9), *Tomentella* (9), *Hyphoderma* (7), *Peniophora* (7), *Sistotrema* (7) and *Tubulicrinis* (7), respectively.

During the field work six species new to Finland were

collected, viz. *Peniophorella tsugae* (Burt) K.H. Larss., *Phlebia cremeoalutacea* (Parmasto) K.H. Larss. & Hjortstam, *Tomentella albomarginata* (Bourdot & Galzin) M. J. Larsen, *Trechispora araneosa* (Höhn. & Litsch.) K.H. Larss., *Tubulicium vermiferum* (Bourdot) Oberw. ex Jülich and *Tulasnella danica* Hauerslev. From the study area (year 1997) also derives the only Finnish specimen of *Sidera vulgaris* (Fr.) Miettinen. The checklist includes 26 species which can be defined as rare, or at least seldom collected, with five or less earlier records in Finland (Kotiranta et al. 2009).

DISCUSSION

The number of identified species (303) in this study is among the highest in Finland if compared to the area studied. This can be explained for example by the high diversity of habitats and host tree species and the relatively high volume of dead wood. Not fully identified material of genera such as *Thelephora* and *Xylodon* are not included and may represent undescribed species.

The 18 nationally red-listed species belong to the following threat categories: Endangered (1 species, EN), Vulnerable (4, VU), Near Threatened (11, NT), and Data Deficient (2, DD) (see Table 1). However, the number of species, as well as the number of threatened species were derived from less than 10% of all land area of the study area. Even if the islands inventoried represent the variation of habitats and different archipelago zones, it is likely that the diversity is much higher than shown in this article. It is well known that fungi do not fruit every year and species occupying narrow ecological niches may have been overlooked. Even after this study the archipelago of the Baltic Sea remains a biogeographically inadequately known part of Finland, partly because of its inaccessibility.

There are 13 old-growth forest indicator species for pine dominated forests in this material and the indicator value is 14 points according to the classification of Kotiranta and Niemelä (1996). This is 40% of indicator species used for pine dominated forests in Finland (Kotiranta and Niemelä 1996). If this is compared to some other large-scale aphyllophoroid fungi inventories in Southern Finland, it is clear that the amount is relatively high. Remote location has saved these areas from large-scale intensive forestry and this may explain why many forests in the archipelago have a high degree of naturalness (P. Kunttu, unpubl.). Many of these old-growth forest species are today common only in the protected areas in northern or eastern Finland. It is obvious that the distribution of these species has earlier covered almost the whole of Finland, but as a result of forceful forestry with large clear-cuts these species can survive nowadays only in some spared small and remote forests here and there, mainly in less inhabited northern Finland. Dispersal capability of some fungal species with specialised resources and habitat requirements may be quite weak and this affects the occurrence of these species in fragmented landscapes (Norros et al. 2012).

It is not possible to compare the number of species with other areas, because inventories in this part of Finland are focused mainly on polypores. Also, areas and inventory methods vary. However, a few examples of studies combining polypores and corticioids exist: from 10 hectares herb-rich forest 109 aphyllophoroid species have been found (Kunttu and Kulju 2009), from the Ekenäs Archipelago National Park 150 aphyllophoroid species were recorded with an indicator value of 10 points (Bonn and Routasuo 1997; Kunttu and Kolehmainen 2011; Pennanen 2013) and one old-growth forest area on southern coast harboured 173 aphyllophoroid species (Kiema and Saarenoksa 2009). Juutilainen et al. (2011) found 133 aphyllophoroid species (mainly from twigs) from 48 small size sample plots in central Finland. The inventories of only polypores yielded 119 species from the Åland Islands (Schigel 2007) and 91

Table 1. Aphyllophoroid fungi of the Archipelago Sea National Park and its surrounding area.

Abbreviations of colletors of voucher specimens: PK = Panu Kunttu, TK = Timo Kosonen, JV = Jukka Vauras, KS = Kimmo Syrjänen, M-LH = Maija-Liisa Heinonen, PH = Pekka Heinonen
Abbreviations of herbaria: TUR = University of Turku, TUR-A = Åbo Akademi, H = University of Helsinki
Red List Status (**RLS**) in Finland: **EN** = Endangered, **VU** = Vulnerable, **NT** = Near Threatened, **DD** = Data Deficient, **LC** = Least Concern (IUCN 2006), **RE** = Regionally Extinct
Rare species = five or less Finnish collections

Species and authors	Voucher	Herbarium	RLS 2010	RLS 2000	Rare species
Alutaceodontia alutacea (Fr.) Hjortstam & Ryvarden	PK 6415	TUR	LC	LC	
Amphinema byssoides (Pers.: Fr.) J. Erikss.	PK 4739	TUR	LC	LC	
Amylostereum areolatum (Chaillet ex Fr.) Boidin	PK 7001	TUR	LC	NT	
Amylostereum laevigatum (Fr.) Boidin	JV 13263	TUR-A	LC	LC	
Anomoporia kamtschatica (Parmasto) Bondartseva	PK 7342	TUR	LC	LC	
Antrodia mappa (Overh. & Lowe) Miettinen & Vlasàk (*Postia mappa* (Owerh. & Lowe) M.J. Larsen & Lombard)	PK 6175	TUR	EN	RE	4th
Antrodia ramentacea (Berk. & Broome) Donk	PK 6172	TUR	VU	NT	
Antrodia serialis (Fr.) Donk	PK 6546	TUR	LC	LC	
Antrodia sinuosa (Fr.) P. Karst.	PK 6109	TUR	LC	LC	

Continued

Table 1. *Continued.*

Species and authors	Voucher	Herbarium	RLS 2010	RLS 2000	Rare species
Antrodia xantha (Fr.: Fr.) Ryvarden	PK 6272	TUR	LC	LC	
Antrodiella faginea Vampola & Pouzar	PK 7433	TUR	LC	LC	
Antrodiella ichnusana Berniccia, Renv. & Arras	PK 7329	TUR	LC	LC	
Antrodiella pallescens (Pilát) Niemelä & Miettinen	PK 7337	TUR	LC	LC	
Antrodiella serpula (P. Karst.) Spirin & Niemelä	PK 6863	TUR	LC	LC	
Aphanobasidium pseudotsugae (Burt) Boid. & Gilles	PK 3040	TUR	LC	LC	
Aporpium canescens (P. Karst.) Bondartsev & Singer (*Protomerulius caryae* (Schwein.) Ryvarden *ss. auct.*)	PK 6541	TUR	NT	VU	
Asterostroma laxum Bres.	PK 4740a	TUR	LC	NT	
Athelia arachnoidea (Berk.) Jülich	PK 7540	TUR	LC	LC	
Athelia decipiens (Höhn. & Litsch.) J. Erikss.	PK 3054	TUR	LC	LC	
Athelia epiphylla Pers.: Fr. *coll.*	PK 4486	TUR	LC	LC	
Athelia neuhoffii (Bres.) Donk	PK 6182	TUR	LC	LC	
Athelopsis lembospora (Bourdot) Oberw.	PK 7494b	TUR	LC	LC	
Basidiodendron caesiocinereum (Höhn. & Litsch.) Luck-Allen	PK 4125b	TUR	LC	LC	
Basidioradulum radula (Fr.) Nobles	PK 3246	TUR	LC	LC	
Bjerkandera adusta (Willd.: Fr.) P. Karst.	PK 3229	TUR	LC	LC	
Botryobasidium aureum Parmasto (only anamorph *Haplotrichum aureum* (Pers.) Hol.-Jech.)	PK 4449	TUR	LC	LC	4th
Botryobasidium botryosum (Bres.) J. Erikss. (*B. vagum* (Berk. & M.A.Curtis) D.P. Rogers *ss.auct.*)	PK 7536a	TUR	LC	LC	
Botryobasidium candicans J. Erikss.	PK 4617b	TUR	LC	LC	
Botryobasidium conspersum J. Erikss.	PK 6057b	TUR	LC	LC	
Botryobasidium isabellinum (Fr.) Rogers (*Botryohypochnus isabellinus* (Fr.) J. Erikss.)	PK 6828	TUR	LC	LC	
Botryobasidium laeve (J. Erikss.) Parmasto	PK 7005	TUR	LC	LC	
Botryobasidium obtusisporum J. Erikss.	PK 3222b	TUR	LC	LC	
Botryobasidium pruinatum (Bres.) J. Erikss.	PK 3204	TUR	LC	LC	
Botryobasidium subcoronatum (Höhn. & Litsch.) Donk	PK 3210	TUR	LC	LC	
Brevicellicium exile (H.S. Jacks.) K.H. Larsson & Hjortstam	PK 7503b	TUR	LC	LC	2nd
Brevicellicium olivascens (Bres.) K.H. Larsson & Hjortstam	PK 7534	TUR	LC	LC	
Bulbillomyces farinosus (Bres.) Jülich	PK 7486c	TUR	LC	LC	
Byssomerulius corium (Fr.) Parmasto	PK 7525	TUR	LC	LC	
Ceraceomyces eludens K.H. Larsson	PK 3015	TUR	LC	LC	
Ceraceomyces microsporus K.H. Larsson	PK 6080a	TUR	LC	LC	
Ceraceomyces serpens (Tode: Fr.) Ginns	PK 6129	TUR	LC	LC	
Ceratobasidium cornigerum (Bourdot) D.P. Rogers	PK 6350	TUR	LC	LC	
Ceriporia reticulata (Hoffm.: Fr.) Domanski	PK 6260a	TUR	LC	LC	
Ceriporia viridans (Berk. & Broome) Donk *sensu lato*	PK 3102	TUR	LC	LC	
Ceriporiopsis aneirina (Sommerf.) Domanski	TK 779-2008	TUR	NT	LC	
Cerrena unicolor (Bull.: Fr.) Murrill	PK 8232	TUR	LC	LC	
Chaetoderma luna (Romell ex Rogers & Jacks.) Parmasto	PK 3038b	TUR	LC	LC	
Chondrostereum purpureum (Pers.: Fr.) Pouzar	PK 6572	TUR	LC	LC	
Cinereomyces lindbladii (Berk.) Jülich	PK 7322	TUR	LC	LC	
Climacocystis borealis (Fr.) Kotl. & Pouzar	PK 7194	TUR	LC	LC	
Climacodon septentrionalis (Fr.) P.Karst.	M-LH & PH 724-97	TUR	LC	LC	
Colacogloea peniophorae (Bourdot & Galzin) Oberw., R. Bauer & Bandoni	PK 6860c	TUR	LC	LC	5th
Coltricia perennis (L.: Fr.) Murrill	JV 14444	TUR-A	LC	LC	
Conferticium ochraceum (Fr.: Fr.) Hallenb.	PK 6410	TUR	LC	LC	
Coniophora arida (Fr.) P. Karst.	PK 4705a	TUR	LC	LC	
Coniophora fusispora (W.B. Cooke & Ellis) Sacc.	PK 6673a	TUR	LC	LC	
Coniophora olivacea (Pers.: Fr.) P. Karst.	PK 7429	TUR	LC	LC	
Coniophora puteana (Schumach.: Fr.) P. Karst.	PK 3008	TUR	LC	LC	
Corticium roseum Pers.: Fr.	PK 6479c	TUR	LC	LC	
Cristinia helvetica (Pers.) Parmasto	PK 2995	TUR	LC	LC	
Cylindrobasidium evolvens (Fr.: Fr.) Jülich	PK 4526	TUR	LC	LC	
Cytidia salicina (Fr.) Burt	PK 7191	TUR	LC	LC	
Dacryobolus karstenii (Bres.) Oberw. ex Parmasto	PK 7413	TUR	LC	LC	
Daedalea quercina L.: Fr.	PK 6943	TUR	LC	LC	
Daedaleopsis confragosa (Bolton: Fr.) J. Schröt.	PK 2914	TUR	LC	LC	
Datronia mollis (Sommerf.) Donk	PK 7225	TUR	LC	LC	
Dendrothele amygdalispora Hjortstam	PK 6635	TUR	LC	LC	

Continued

Table 1. *Continued.*

Species and authors	Voucher	Herbarium	RLS 2010	RLS 2000	Rare species
Dichomitus campestris (Quél.) Dománski & Orlicz	PK 6443	TUR	NT	NT	
Eichleriella deglubens (Berk. & Broome) D.A. Reid	M-LH & PH 1192-97	TUR	LC	LC	
Exidiopsis calcea (Pers.: Fr.) K. Wells	PK 4619	TUR	LC	LC	
Fibroporia norrlandica (Berglund & Ryvarden) Niemelä	PK 7192	TUR	LC	LC	
Fibroporia vaillantii (DC.: Fr.) Parmasto	PK 7226	TUR	LC	LC	
Fistulina hepatica Schaeff.: Fr.	PK 6942	TUR	NT	NT	
Fomes fomentarius (L.: Fr.) Fr.	PK 8224	TUR	LC	LC	
Fomitopsis pinicola (Sw.: Fr.) P. Karst.	PK 8240	TUR	LC	LC	
Galzinia incrustans Parmasto	TK 065-2008	TUR	LC	LC	
Ganoderma applanatum (Pers.) Pat.	PK 6855	TUR	LC	LC	
Ganoderma lucidum (M.A. Curtis: Fr.) P. Karst.	PK 7229	TUR	LC	LC	
Gelatoporia subvermispora (Pilát) Niemelä	PK 6821b	TUR	NT	NT	
Globulicium hiemale (Laurila) Hjortstam	PK 4658	TUR	LC	LC	
Gloeocystidiellum porosum (Berk. & M.A. Curtis) Donk	PK 6597	TUR	LC	LC	
Gloeophyllum odoratum (Wulfen: Fr.) Imazeki	PK 8223	TUR	LC	LC	
Gloeophyllum sepiarium (Wulfen: Fr.) P. Karst.	PK 7228	TUR	LC	LC	
Gloeoporus dichrous (Fr.: Fr.) Bres.	PK 6352	TUR	LC	LC	
Hapalopilus aurantiacus (Rostk.) Bondartsev & Singer	PK 8257	TUR	NT	-	
Hapalopilus rutilans (Pers.: Fr.) P. Karst.	PK 6614	TUR	LC	LC	
Hastodontia hastata (Litsch.) Hjortstam & Ryvarden	PK 6611	TUR	LC	LC	
Helicogloea lagerheimii Pat.	PK 4503	TUR	LC	LC	4th
Henningsomyces candidus (Pers.: Fr.) Kuntze	PK 3065	TUR	LC	LC	
Hericium coralloides (Scop.: Fr.) Pers.	JV 8252	TUR	LC	LC	
Heterobasidion annosum (Fr.) Bref.	PK 7321	TUR	LC	LC	
Heterobasidion parviporum Niemelä & Korhonen	PK 6408	TUR	LC	LC	
Hymenochaete cinnamomea (Fr.) Bres.	PK 7432	TUR	LC	LC	
Hymenochaete fuliginosa (Pers.) Bres.	PK 6525a	TUR	LC	LC	
Hymenochaete rubiginosa (Fr.) Lév.	JV 8627	TUR	LC	LC	
Hymenochaete tabacina (Sowerby) Lév. (*Pseudochaete tabacina* (Sowerby) T. Wagner & M. Fisch.)	PK 2908	TUR	LC	LC	
Hyphoderma argillaceum (Bres.) Donk	PK 4070a	TUR	LC	LC	
Hyphoderma definitum (H.S. Jacks.) Donk	PK 3242	TUR	LC	LC	
Hyphoderma medioburiense (Burt) Donk	PK 6537	TUR	LC	LC	
Hyphoderma obtusiforme J. Erikss. & Å. Strid	TK 780-2008	TUR	LC	LC	
Hyphoderma occidentale (D.P. Rogers) Boidin & Gilles	PK 6166a	TUR	LC	LC	
Hyphoderma roseocremeum (Bres.) Donk	PK 6043	TUR	LC	LC	
Hyphoderma setigerum (Fr.) Donk	PK 4005	TUR	LC	LC	
Hyphodontia alutaria (Burt) J. Erikss.	PK 7024	TUR	LC	LC	
Hyphodontia arguta (Fr.) J. Erikss.	PK 7497b	TUR	LC	LC	
Hyphodontia pallidula (Bres.) J. Erikss.	PK 4401	TUR	LC	LC	
Hypochniciellum subillaqueatum (Litsch.) Hjortstam	TK 772b-2008	TUR	LC	LC	
Hypochnicium albostramineum (Bres.) Hallenb.	TK 782a-2008	TUR	LC	LC	
Hypochnicium bombycinum (Sommerf.) J. Erikss.	PK 7326	TUR	LC	LC	
Hypochnicium punctulatum (*H. albostramineum* (Bres.) Hallenb., *H. eichleri* (Bres.) J. Erikss. & Ryvarden *ss.auct*)	PK 3247	TUR	LC	LC	
Hypochnicium erikssonii Hallenb. & Hjortstam	PK 4432	TUR	LC	LC	
Hypochnicium geogenium (Bres.) J. Erikss.	PK 4494c	TUR	LC	LC	
Hypochnicium cremicolor (Bres.) Bres.) H. Nilsson & Hallenb. (*H. punctulatum* (W.B. Cooke) J. Erikss. *ss auct.*)	PK 6336c	TUR	LC	NT	
Inonotus obliquus (Pers.: Fr.) Pilát	PK 4385b	TUR	LC	LC	
Inonotus radiatus (Sowerby: Fr.) P. Karst.	PK 7023b	TUR	LC	LC	
Inonotus rheades (Pers.) Bondartsev & Singer	PK 6569	TUR	LC	LC	
Irpex oreophilus (Lindsey & Gilb.) Niemelä	PK 7217	TUR	LC	LC	
Irpicodon pendulus (Alb. & Schwein.: Fr.) Pouzar	PK 6131a	TUR	NT	NT	
Ischnoderma benzoinum (Wahlenb.: Fr.) P. Karst.	PK 3146	TUR	LC	LC	
Jaapia ochroleuca (Bres.) Nannf. & J. Erikss.	PK 7501a	TUR	LC	LC	
Junghuhnia lacera (P. Karst.) Niemelä & Kinnunen	PK 6935	TUR	LC	LC	
Junghuhnia luteoalba (P. Karst.) Ryvarden	PK 6296b	TUR	LC	LC	
Junghuhnia nitida (Pers.: Fr.) Ryvarden	PK 6941	TUR	LC	LC	
Kavinia alboviridis (Morgan) Gilb. & Budington	PK 4541	TUR	LC	NT	
Kneiffiella abieticola (Bourdot & Galzin) Jülich & Stalpers	PK 6115	TUR	LC	LC	

Continued

Table 1. *Continued.*

Species and authors	Voucher	Herbarium	RLS 2010	RLS 2000	Rare species
Kneiffiella barba-jovis (Bull.: Fr.) P. Karst.	PK 6822	TUR	LC	LC	
Kneiffiella subalutacea (P. Karst.) Jülich & Stalpers	PK 4622c	TUR	LC	LC	
Lagarobasidium detriticum (Bourdot) Jülich	PK 6898a	TUR	LC	LC	
Laxitextum bicolor (Pers.: Fr.) Lentz	PK 6553	TUR	LC	LC	
Lenzites betulinus (L.: Fr.) Fr.	PK 8231	TUR	LC	LC	
Leptosporomyces galzinii (Bourdot) Jülich	PK 4293a	TUR	LC	LC	
Leucogyrophana mollusca (Fr.) Pouzar	PK 7223	TUR	LC	LC	
Leucogyrophana romellii (Fr.) Ginns	PK 6402b	TUR	LC	LC	
Leucogyrophana sororia (Burt) Ginns	PK 6736a	TUR	LC	LC	
Lindtneria chordulata (D.P. Rogers) Hjortstam	PK 6439	TUR	VU	VU	3rd
Luellia recondita (H.S. Jacks.) K.H. Larsson & Hjortstam	PK 4057a	TUR	LC	LC	4th
Lyomyces sambuci (Pers.: Fr.) P. Karst.	PK 6501	TUR	LC	LC	
Meruliopsis taxicola (Pers.: Fr.) Bondartsev	PK 3009	TUR	LC	LC	
Metulodontia nivea (P. Karst.) Parmasto	PK 6482	TUR	LC	NT	
Oligoporus rennyi (Berk. & Broome) Donk	PK 7315	TUR	LC	LC	
Oligoporus sericeomollis (Romell) Bondartsev	PK 7193	TUR	LC	LC	
Oliveonia fibrillosa (Burt) Donk	PK 6889a	TUR	LC	LC	3rd
Onnia tomentosa (Fr.) P. Karst	KS 23.VIII.1993	TUR	NT	NT	
Peniophora cinerea (Pers.: Fr.) W.B. Cooke	PK 7020	TUR	LC	LC	
Peniophora incarnata (Pers.: Fr.) P. Karst.	PK 4315	TUR	LC	LC	
Peniophora limitata (Chaillet ex Fr.) W.B. Cooke	PK 6312	TUR	LC	LC	
Peniophora nuda (Fr.) Bres.	PK 6038	TUR	LC	LC	
Peniophora pithya (Pers.) J. Erikss.	PK 6192	TUR	LC	LC	
Peniophora polygonia (Pers.: Fr.) Bourdot & Galzin	PK 6157	TUR	LC	LC	
Peniophora violaceolivida (Sommerf.) Massee	PK 6894	TUR	LC	LC	
Peniophorella echinocystis (J. Erikss. & Å. Strid) K.H. Larss.	PK 3103	TUR	LC	EN	3rd
Peniophorella guttulifera (P. Karst.) K.H. Larss.	PK 6594	TUR	NT	NT	
Peniophorella pallida (Bres.) K.H. Larss.	PK 3226a	TUR	LC	LC	
Peniophorella praetermissa (P. Karst.) K.H. Larss. *coll.*	PK 4709c	TUR	LC	LC	
Peniophorella pubera (Fr.) P. Karst.	PK 4677	TUR	LC	LC	
Peniophorella tsugae (Burt) K.H. Larss.	PK 4494a	TUR	LC	LC	1st
Phaeolus schweinitzii (Fr.) Pat.	PK 6354	TUR	LC	LC	
Phanerochaete laevis (Pers.: Fr.) J. Erikss. & Ryvarden	PK 7184	TUR	LC	LC	
Phanerochaete magnoliae (Berk. & M.A. Curtis) Burds.	PK 4015b	TUR	LC	LC	
Phanerochaete sanguinea (Fr.) Pouzar	PK 6296a	TUR	LC	LC	
Phanerochaete sordida (P. Karst.) J. Erikss. & Ryvarden	PK 4700	TUR	LC	LC	
Phanerochaete tuberculata (P. Karst.) Parmasto	PK 4026	TUR	LC	LC	
Phanerochaete velutina (DC.: Fr.) P. Karst.	PK 3999	TUR	LC	LC	
Phellinus abietis (P. Karst.) Jahn	PK 7189	TUR	LC	LC	
Phellinus alni (Bondartsev) Parmasto	PK 8242	TUR	LC	LC	
Phellinus cinereus (Niemelä) M. Fisch.	PK 8235	TUR	LC	LC	
Phellinus conchatus (Pers.: Fr.) Quél.	PK 6486	TUR	LC	LC	
Phellinus ferrugineofuscus (P. Karst.) Bourdot	PK 7453	TUR	LC	NT	
Phellinus igniarius (L.: Fr.) Quél.	PK 7339	TUR	LC	LC	
Phellinus laevigatus (P. Karst.) Bourdot & Galzin	PK 6366	TUR	LC	LC	
Phellinus lundellii Niemelä	PK 6368	TUR	LC	LC	
Phellinus nigrolimitatus (Romell) Bourdot & Galzin	PK 2998	TUR	LC	LC	
Phellinus pini (Brot.: Fr.) A. Ames	PK 7195	TUR	LC	LC	
Phellinus populicola Niemelä	PK 6437	TUR	LC	LC	
Phellinus punctatus (P. Karst.) Pilát	PK 6948	TUR	LC	LC	
Phellinus tremulae (Bondartsev) Bondartsev & P.N. Borisov	PK 2899	TUR	LC	LC	
Phellinus viticola (Schwein. ex. Fr.) Donk	PK 7744	TUR	LC	LC	
Phlebia albida H. Post	PK 6479a	TUR	LC	LC	
Phlebia cremeoalutacea (Parmasto) K.H. Larss.& Hjortstam	PK 2988	TUR	LC	LC	1st
Phlebia fuscoatra (Fr.) Nakasone	PK 6690	TUR	LC	LC	
Phlebia gigantea (Fr.: Fr.) Donk	PK 6279	TUR	LC	LC	
Phlebia radiata Fr.	PK 7170	TUR	LC	LC	
Phlebia segregata (Bourdot & Galzin) Parmasto	PK 3107	TUR	LC	LC	
Phlebia subochracea (Bres.) J. Erikss. & Ryvarden	PK 3196	TUR	LC	LC	

Continued

Table 1. *Continued.*

Species and authors	Voucher	Herbarium	RLS 2010	RLS 2000	Rare species
Phlebia subserialis (Bourdot & Galzin) Donk	PK 8256	TUR	LC	LC	
Phlebia tremellosa (Schrad.: Fr.) Nakasone	PK 7219	TUR	LC	LC	
Phlebia uda (Fr.) Nakasone	PK 3050	TUR	LC	VU	
Phlebiella sulphurea (Pers.: Fr.) Ginns & M.N.L. Lefebvre	PK 4302a	TUR	LC	LC	
Phlebiella tulasnelloidea (Höhn. & Litsch.) Ginns & M.N.L. Lefevbre	PK 6314	TUR	LC	LC	
Physisporinus vitreus (Pers.: Fr.) P. Karst.	PK 7486b	TUR	LC	LC	
Piloderma byssinum (P. Karst.) Jülich	PK 2984	TUR	LC	LC	
Piloderma fallax (Liberta) Stalpers	PK 3100	TUR	LC	LC	
Piloderma sphaerosporum Jülich	PK 4130	TUR	LC	LC	
Piptoporus betulinus (Bull.: Fr.) P. Karst.	PK 8217	TUR	LC	LC	
Polyporus ciliatus Fr.: Fr.	PK 6378	TUR	LC	LC	
Polyporus leptocephalus (Jacq.: Fr.) Fr.	PK 8283	TUR	LC	LC	
Polyporus melanopus (Pers.: Fr.) Fr.	M-LH & PH 976-97	TUR	LC	LC	
Porpomyces mucidus (Pers.: Fr.) Jülich	PK 7440	TUR	LC	LC	
Postia alni Niemelä & Vampola	PK 7437	TUR	LC	LC	
Postia caesia (Schrad.: Fr.) P. Karst.	PK 7155	TUR	LC	LC	
Postia ceriflua (Berk. & M.A. Curtis) Jülich	M-LH & PH 246-96	H	VU	EN	
Postia floriformis (Quél. ex Bres.) Jülich	PK 7157	TUR	LC	LC	
Postia fragilis (Fr.) Jülich	PK 7438	TUR	LC	LC	
Postia guttulata (Peck) Jülich	M-LH & PH 911-97	TUR	NT	NT	
Postia immitis (Peckf	PK 3991	TUR	DD	-	3rd
Postia lactea (Fr.) P.Karst.	M-LH & PH 914-97	TUR	LC	LC	
Postia leucomallella (Murrill) Jülich	PK 4757	TUR	LC	LC	
Postia ptychogaster (F. Ludw.) Vesterh.	PK 6185	TUR	LC	LC	
Postia stiptica (Pers.: Fr.) Jülich	PK 7423	TUR	LC	LC	
Postia tephroleuca (Fr.) Jülich	PK 7227	TUR	LC	LC	
Pycnoporellus fulgens (Fr.) Donk	KS 25.VIII.1993	TUR	LC	LC	
Pycnoporus cinnabarinus (Jacq.: Fr.) P. Karst.	PK 6657	TUR	LC	LC	
Radulomyces confluens (Fr.: Fr.) M.P. Christ.	PK 6124	TUR	LC	LC	
Repetobasidium vile (Bourdot & Galzin) J. Erikss.	PK 6122a	TUR	LC	LC	3rd
Resinicium bicolor (Alb. & Schwein.: Fr.) Parmasto	PK 3114b	TUR	LC	LC	
Resinicium furfuraceum (Bres.) Parmasto	PK 6186c	TUR	LC	LC	
Resinicium pinicola (J. Erikss.) J. Erikss. & Hjortstam	PK 6249	TUR	LC	LC	2nd
Rigidoporus corticola (Fr.) Pouzar	PK 6090	TUR	LC	LC	
Rigidoporus populinus (Schumach.: Fr.) Pouzar	PK 6831	TUR	LC	LC	
Schizopora flavipora (Berk. & M.A. Curtis ex W.B. Cooke) Ryvarden	TK 737-2008	TUR	DD	DD	2nd
Schizopora paradoxa (Schrad.: Fr.) Donk	PK 7169	TUR	LC	LC	
Schizopora radula (Pers.: Fr.) Hallenb.	PK 7508	TUR	LC	LC	
Scopuloides rimosa (W.B. Cooke) Jülich	PK 7523a	TUR	LC	LC	
Scytinostroma portentosum (Berk. & M.A. Curtis) Donk	PK 6158	TUR	LC	LC	
Sidera vulgaris (Fr.: Fr.) Miettinen (*Cinereomyces vulgaris* (Fr.: Fr.) Spirin)	M-LH & PH 1078-97	TUR	LC	LC	1st
Sistotrema brinkmannii (Bres.) J. Erikss.	PK 6591a	TUR	LC	LC	
Sistotrema confluens Pers.: Fr.	JV 8671	TUR	LC	LC	
Sistotrema muscicola (Pers.) S. Lundell	PK 7333	TUR	LC	LC	
Sistotrema raduloides (P. Karst.) Donk	PK 7527	TUR	LC	NT	
Sistotrema sernanderi (Litsch.) Donk	PK 4017b	TUR	LC	LC	
Sistotremastrum niveocremeum (Höhn. & Litsch.) J. Erikss.	PK 4372	TUR	LC	LC	
Sistotremastrum suecicum Litsch. ex J. Erikss.	PK 3108	TUR	LC	LC	
Skeletocutis amorpha (Fr.) Kotl. & Pouzar	PK 4666b	TUR	LC	LC	
Skeletocutis biguttulata (Romell) Niemelä	PK 3226b	TUR	LC	LC	
Skeletocutis carneogrisea A. David	PK 6926	TUR	LC	LC	
Skeletocutis papyracea A. David	PK 3034	TUR	LC	LC	
Skeletocutis stellae (Pilát) Jean Keller	PK 7214	TUR	VU	VU	
Spongipellis fissilis (Berk. & M.A. Curtis) Murrill	PK 6502	TUR	NT	VU	
Spongiporus undosus (Peck) A. David	PK 6834	TUR	LC	LC	
Steccherinum bourdotii Saliba & A. David	PK 7172	TUR	LC	VU	4th
Steccherinum fimbriatum (Pers.: Fr.) J. Erikss.	PK 6495	TUR	LC	LC	
Steccherinum ochraceum (Pers.) Gray	PK 3049a	TUR	LC	LC	
Stereum hirsutum (Willd.: Fr.) Gray	PK 8219	TUR	LC	LC	

Continued

Table 1. *Continued.*

Species and authors	Voucher	Herbarium	RLS 2010	RLS 2000	Rare species
Stereum rugosum Pers.: Fr.	PK 3136	TUR	LC	LC	
Stereum sanguinolentum (Alb. & Schwein.: Fr.) Fr.	PK 8238	TUR	LC	LC	
Stereum subtomentosum Pouzar	PK 8241	TUR	LC	LC	
Stypella dubia (Bourdot & Galzin) P. Roberts	PK 6435	TUR	LC	LC	
Subulicystidium longisporum (Pat.) Parmasto	PK 4014	TUR	LC	LC	
Thanatephorus fusisporus (J. Schröt.) P. Roberts & Hauerslev	PK 6622a	TUR	LC	LC	
Thelephora palmata Scop.: Fr.	M-LH & PH 1064-97	TUR	LC	LC	
Thelephora terrestris Ehrh.: Fr.	PK 8214	TUR	LC	LC	
Tomentella albomarginata (Bourdot & Galzin) M. J. Larsen	PK 3997	TUR	LC	LC	1st
Tomentella atramentaria Rostr.	PK 6890	TUR	LC	LC	
Tomentella coerulea (Bres.) Höhn. & Litsch.	PK 3995	TUR	LC	LC	2nd
Tomentella ellisii (Sacc.) Jülich & Stalpers	PK 7486a	TUR	LC	LC	
Tomentella fibrosa (Berk. & M.A. Curtis) Kõljalg	TK 050-2008	TUR	LC	LC	
Tomentella galzinii Bourdot	PK 7021	TUR	LC	LC	
Tomentella stuposa (Link) Stalpers	PK 4714	TUR	LC	LC	
Tomentella sublilacina (Ellis & Holw.) Wakef. coll.	PK 6992c	TUR	LC	LC	
Tomentella terrestris (Berk. & Broome) M.J. Larsen	PK 4003	TUR	LC	LC	3rd
Tomentellopsis echinospora (Ellis) Hjortstam coll.	PK 4031	TUR	LC	LC	
Tomentellopsis submollis (Svrček) Hjortstam	PK 5984a	TUR	LC	LC	
Tomentellopsis zygodesmoides Ellis & Hjortstam	PK 4755b	TUR	LC	LC	2nd
Trametes hirsuta (Wulfen: Fr.) Pilát	PK 6457	TUR	LC	LC	
Trametes ochracea (Pers.) Gilb. & Ryvarden	PK 2907	TUR	LC	LC	
Trametes pubescens (Schumach.: Fr.) Pilát	PK 8227	TUR	LC	LC	
Trametes velutina (Fr.) G. Cunn.	PK 6658	TUR	LC	LC	
Trechispora araneosa (Höhn. & Litsch.) K.H. Larss.	PK 4454a	TUR	LC	LC	1st
Trechispora cohaerens (Schwein.) Jülich & Stalpers	PK 4385d	TUR	LC	LC	
Trechispora confinis (Bourdot & Galzin) Liberta	PK 4434b	TUR	LC	LC	
Trechispora farinacea (Pers.: Fr.) Liberta	PK 4437a	TUR	LC	LC	
Trechispora hymenocystis (Berk. & Broome) K.H. Larss.	PK 4529	TUR	LC	LC	
Trechispora invisitata (H.S. Jacks.) Liberta ssp. *hauerslevi* K.H. Larss.	PK 4497a	TUR	LC	LC	4th
Trechispora kavinioides de Vries	PK 7177	TUR	LC	LC	
Trechispora laevis K.H. Larss.	PK 6078	TUR	LC	LC	5th
Trechispora microspora (P. Karst.) Liberta	PK 4479a	TUR	LC	LC	
Trechispora minuta K.H. Larss.	PK 6986a	TUR	LC	LC	
Trechispora mollusca (Pers.: Fr.) Liberta	PK 6592	TUR	LC	LC	
Trechispora nivea (Pers.) K.H. Larss.	TK 819-2008	TUR	LC	LC	
Trechispora praefocata (Bourdot & Galzin) Liberta	PK 4667a	TUR	LC	LC	
Trechispora stevensonii (Berk. & Broome) K.H. Larss.	PK 6627b	TUR	LC	LC	
Trechispora subsphaerospora (Litsch.) Liberta	PK 6191b	TUR	LC	LC	
Trichaptum abietinum (Pers.: Fr.) Ryvarden	PK 8222	TUR	LC	LC	
Trichaptum fuscoviolaceum (J.C. Schmidt: Fr.) Kreisel	PK 8233	TUR	LC	LC	
Tubulicium vermiferum (Bourdot) Oberw. ex Jülich	PK 6467a	TUR	LC	LC	1st
Tubulicrinis accedens (Bourdot & Galzin) Donk	PK 4753b	TUR	LC	LC	
Tubulicrinis angustus (D.P. Rogers & Weresub) Donk	PK 6247a	TUR	LC	LC	
Tubulicrinis calothrix (Pat.) Donk	PK 3002	TUR	LC	LC	
Tubulicrinis glebulosus (Bres.) Donk	PK 4064	TUR	LC	LC	
Tubulicrinis medius (Bourdot & Galzin) Oberw.	PK 4691a	TUR	LC	LC	
Tubulicrinis propinquus (Bourdot & Galzin) Donk	PK 4632b	TUR	LC	LC	
Tubulicrinis subulatus (Bourdot & Galzin) Donk	PK 4763	TUR	LC	LC	
Tulasnella danica Hauerslev	PK 7484d	TUR	LC	LC	1st
Tulasnella pinicola Bres.	PK 4406b	TUR	LC	LC	
Tulasnella violea (Quél.) Bourdot & Galzin	PK 4440	TUR	LC	LC	
Tylospora fibrillosa (Burt) Donk	PK 4376b	TUR	LC	LC	
Tyromyces chioneus (Fr.) P. Karst.	PK 3224	TUR	LC	LC	
Vesiculomyces citrinus (Pers.) E. Hagstr.	PK 7173	TUR	LC	LC	
Vuilleminia comedens (Nees: Fr.) Maire	PK 4654	TUR	LC	LC	
Xylodon asperus (Fr.) Hjortstam & Ryvarden	TK 825a-2008	TUR	LC	LC	
Xylodon brevisetus (P. Karst.) Hjortstam & Ryvarden	PK 6149b	TUR	LC	LC	
Xylodon crustosus (Pers.) Chevall.	PK 7485a	TUR	LC	LC	
Xylodon rimosissimus (Peck) Hjortstam & Ryvarden	PK 6153	TUR	LC	LC	

species from Karkali Strict Nature Reserve with indicator value of 10 points (Savola 2006).

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